

X-LASER

BUILT TO PERFORM™

PYRO & PYRO-RGY USER INFORMATION

For Professional Use Only

X-Laser, LLC
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Note: X-Laser strongly recommends keeping this manual with your new laser fixture at all times both as a laser safety reference and a field reference for DMX operation. DMX charts are included for your convenience.

**BEFORE USING THIS PRODUCT, READ AND FOLLOW ALL NOTICES
AND SAFETY INFORMATION THROUGHOUT THIS GUIDE.**

Caution – use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

LASER LIGHT – Avoid Direct Eye Exposure

This product is FDA certified as Class IIIR which is the international standard equivalent to Class IIIA in the USA.

SAFETY NOTICES:

- 1) Do not expose the human eye directly or indirectly to focused or scattered laser radiation as loss of vision, complete blindness, and/or other serious injuries may result.*
- 2) This fixture is not intended for direct audience scanning effects. Keep laser beams away from operators and other persons at all times. The operator MUST allow a MINIMUM clearance of six (6) feet from the front (apertures) of the fixture to any point or surface of beam termination. Laser power levels at the very front of the fixture WILL be exponentially higher than even one foot away.
- 3) This unit is intended for indoor use only and should at all times be protected from fluids, dust, and humidity. Do not expose this fixture to temperatures outside of its' normal working range of 60-85 degrees F.
- 4) There are no user serviceable parts inside of the fixture. Opening the outer casing will void the warranty and could result in radiation exposure. Any modifications to the fixture are prohibited, may be dangerous, and will immediately void the factory warranty.**
- 5) Always ensure that the power supply is properly grounded before use.
- 6) DO NOT USE this fixture if you suspect that it contains a defect of any kind either from manufacturing, damage, general wear or has a broken manufacturer's seal. Return the fixture to the factory for service and/or maintenance immediately.
- 7) Lasers are capable of starting fires at great distances. Do not use this product around or in a path to any combustible or otherwise flammable materials.
- 8) Before using this product in any capacity, ensure that the unit is properly secured to prevent accidental beam shifts and that a safety cable is used for any aerial rigging.
- 10) This product is not a toy and should be kept inaccessible to unauthorized persons before, during, and after use. This product is intended for professional use only and should be used with care.***
- 11) This unit should never be left unattended while operational and should always be unplugged from both DMX and power while being transported, rigged, de-rigged, cleaned as described below, or when a qualified operator is not present. We also recommend keeping your DMX controller separate from the laser at all times to prevent unwanted activation.***
- 12) Before using this product, it is the responsibility of the user to be familiar with all Federal and State reporting and usage requirements. Laws vary by state.

*Failure to follow the above precautions and other precautions contained in this user manual, particularly with regard to human exposure to laser radiation and electrical safety, may result in serious injury, loss of vision, electric shock, skin damage, and death. Please refer to the section on laser safety later in this manual for more detailed operation guidelines. Always be mindful that Class 3A/R lasers shoot potentially hazardous radiation at the speed of light.

**Any service and/or maintenance to the fixture is to be performed by factory authorized technicians only except as specifically described in this manual.

***This product should not be operated by persons who are not trained in proper laser safety procedures and/or do not know how to use all components of a DMX system properly.

Introduction:

Thank you for purchasing the X-Laser **PYRO**! You now own one of the most powerful and best crafted laser display systems ever created for the medium scale entertainment industry. Your new **PYRO** is capable of producing absolutely stunning laser effects in nearly any performance application with the convenience and flexibility of full DMX control. With the power of X-Laser fixtures also comes a responsibility for safety so we strongly encourage you to read and follow all of the notices throughout this manual. If you have any questions about proper use of these laser systems, laser safety, troubleshooting, or anything else, visit us on the web 24/7 at www.x-laser.com so that we can best assist you!

Unpacking:

Your new X-Laser should contain the following items:

- 1) One professional laser light show fixture;
- 2) A grounded power cable;
- 3) This user manual.

Quality Control Measures:

When you open your new X-Laser, you may notice that the laser unit and components have already been opened and re-sealed. Each laser is tested once during manufacturing and then given a 26-point safety inspection just before it is sent to you. All of the functions of your new laser including the DMX protocols have been checked to ensure excellent and safe performance. If you find any defects in one of our products or see a broken factory seal on the unit itself, please contact your authorized X-Laser dealer immediately for warranty service.

General Guidelines For Proper Usage:

- 1) Always treat your laser with great care as some components are very fragile. This is not a standard “DJ” light that can bounce around in the back of a van for years and work just fine. Care for it as you would an intelligent mirror scanner.
- 2) Avoid turning the laser on and off frequently as it will reduce the diode life. Also, this fixture does not have a set duty cycle but we do not recommend using it for more than four hours continuously.
- 3) From time to time be sure to clean the laser aperture with a dry tissue that does not pill. This is the only user allowed maintenance.
- 4) Always keep all factory supplied labels on the unit and visible. These are all required for legal compliance.
- 5) During any use of your X-Laser product, be sure to leave an open space around all sides of the laser to facilitate airflow through the unit. Do not obstruct the holes in the casing as these permit air to enter and cycle through the unit.
- 6) You **MUST** allow a minimum clearance of six feet from the front of the PYRO to any projection surface or point of beam termination. Laser power levels at the very front of the fixture **WILL** be exponentially higher than even one foot away. This six foot clearance must be planned for and practiced at ALL times.

7) Always allow the **PYRO** 10 minutes of warm up time to reach full power. The unit will stay “warm” for some time even if off.

General Guidelines For Safe Laser Usage:

Your X-Laser product is a powerful laser device intended for aerial indoor lighting displays operated by professionals. The major concern with professional laser systems is to avoid human contact with the laser beam and to create a safe area where patrons and staff can enjoy your light show. Please observe the following guidelines when using your X-Laser product.

- 1) Do not allow human access to this laser product. While Class IIIA/R laser light is marginally safer in terms of eye exposure than Class IIIB laser light, the FDA disallows human access to laser radiation above Class I levels. Use with caution.
- 2) As a laser light show operator you have a responsibility to reasonably foresee circumstances where conditions could present a safety risk to patrons or staff. This means that making sure all laser units are properly aimed, physically blocked to prevent radiation spill or reflection into safe areas, and securely mounted are all "musts." Also, to be sure that these conditions are met properly trained employees should be the only ones using these products.
- 3) This Class IIIA/R laser product comes with available Sound Active and Auto Modes for your convenience. Always be sure to have a reliable mechanism for deactivating the laser in case of emergency if it is not being controlled by DMX.
- 4) Because there are no user serviceable parts inside of X-Laser products, the outer case should never be opened by the user. To ensure proper safe operation in demonstrations and performances, please immediately discontinue use of your X-Laser product if you notice or suspect that any part of the laser is not functioning properly. In such a case, call us or your dealer for an RMA number and we will repair the unit to bring it back into compliance.
- 6) We strongly recommend that each user of an X-Laser Product read “Safe Laser Display” literature published as ANSI Z136.1 and Z136.10. These and a wealth of laser safety information is available from www.rli.com and the Laser Institute of America. We also strongly recommend that proper safety equipment such as wavelength specific laser safety glasses be used during any times which a technician or others could be exposed to laser radiation.
- 7) Read item #6 in the “General Guidelines For Proper Usage” above again.

We want you to have a wonderful experience with our products so that you can bring the thrill of professional laser light shows to your audiences. The common sense safety procedures outlined in this manual should be easy to successfully implement in your shows and provide you with years of safe and profitable laser displays. Please contact us or your X-Laser dealer via our website if you have any questions about how to safely and effectively use our products!

Installation:

Using the safety requirements above as a preliminary but not exhaustive guide, you may hang or otherwise mount your new **PYRO** in any suitable

orientation EXCEPT upside down. The unit is NOT designed to balance on its' hanging bracket. The writing on the sides or front of the fixture should always be right side up or at no more than a 90 degree angle to level.

X-Laser Panel Examples and Label Location:

Your new **PYRO** comes with several manufacturer supplied labels applied to the case. Sample copies of these labels may be found at the end of this manual. You may locate the “Laser Aperture” label on the front of the unit where the laser beams exit the case. The housing, class, and manufacturer’s labels are generally found on the side of the unit and the serial number may be found either on the side or bottom.

Operating Modes:

Locate the dip switch bank on the rear of the laser which consists of a series of 10 white switches or “pins.” Pushing these pins up and down in different combinations will allow you to access different working modes and DMX addresses as described below. Be sure pins are fully engaged to achieve the desired effect. Up is “ON,” down is “OFF.”

SOUND ACTIVE: Unit responds to low frequency notes in music and runs through available laser patterns. Sensitivity to sound may be adjusted using the knob on the rear of the unit.

Access Sound Active Mode by pushing pin # 10 UP/ON and leaving all other pins down/off.

AUTO MODE: Unit replays all available laser sequences in order.

Access Auto Mode by pushing up pins 9 & 10 to the ON/UP position leaving all other pins down/off.

DMX: Unit responds only to DMX control inputs from an external DMX controller. SOUND ACTIVE and AUTO modes are also accessible via DMX Channel #1 on all fixtures.

Access DMX Mode by making sure that pins 9 & 10 are DOWN/OFF and use pins 1-8 to set the DMX address as show below.

PIN	1	2	3	4	5	6	7	8
DMX Value	+1	+2	+4	+8	+16	+32	+64	+128

Note: Dip switches 9 and 10 are used for special functions and thus the laser is not DMX addressable above address 256. To reach a DMX address of 49 for example, turn switches 1, 5 & 6 to “On,” (1+16+32=49).

Master/Slave: Multiple lasers in a DMX daisy-chained (explained below) circuit NOT controlled by a DMX controller can be controlled instead by a single laser of the same model. Set the “Master” laser to either Sound Active or Auto modes and then turn all dip switches on all “Slave” units DOWN/OFF. All units may require a power cycle to send/receive the control signal.

Creating a DMX Circuit:

Your X-Laser product can be linked to other X-Laser fixtures or other DMX compatible fixtures. To create this link, it is recommended that true DMX cable be used for best operation and that the DMX chain be terminated at the end of the link. Please follow these steps:

- 1) From your DMX controller, connect a 3 pin DMX cable to the “DMX IN” port on the back of your X-Laser Product. For any additional fixtures, continue to daisy chain the DMX cable from the “DMX OUT” port on the first fixture to the “DMX IN” port on the next fixture and so forth down the line. Your total length of DMX cable should not exceed 300’.
- 2) At the end of the DMX link, place a DMX terminator in the “DMX OUT” port of the last fixture in the link.
- 3) Use the dip switches (explained above) to set the DMX address of each fixture in the chain.

STOP

-Before powering on the **PYRO, be sure that you have a minimum of six feet of clearance from the front of the fixture to the nearest point where any beam could terminate.**

-Be sure that the **PYRO is properly and safely rigged.**

-Be sure that you have a reliable method of attenuating the laser beam or powering down the fixture in case of emergency.

-Read the safety information again. Thanks!

X-Laser DMX Traits:

PYRO & PYRO-RGY

Channel	Function	Value	Description
CH1	Mode	0-49	Closed, Laser OFF
		50-99	DMX Mode
		100-149	Sound Active Mode
		150-255	Auto Mode
CH2	Effect Rotation	0-99	Clockwise Direction
		100-199	Stop Movement
		200-255	Counter-Clockwise Direction
CH3	Effect Speed	0-255	0 is FAST, 255 is SLOWEST
CH4	Strobe Rate	0-255	0 is FAST, 255 is SLOWEST
CH5	Color Selection (RGY MODEL ONLY)	0-99	Red + Green - Yellow
		100-199	Red Only
		200-255	Green Only

Note: X-Laser models in the other series have a different user manual. If you inadvertently received this manual, please contact us and we will send the correct manual to you by e-mail immediately!

Maintenance and Service:

The only user required maintenance for your X-Laser is to periodically clean the laser aperture on the front of the unit. This does not require, nor should you ever, open the unit. Always be sure to disconnect the power and DMX from the unit before cleaning. No other service is permitted by the customer.

Warm Up:

In most cases, the **PYRO** will start at approximately 70% of max power and can be used immediately however it may require a warm up time of up to ten minutes from a cold start. This time could be increased if the diode is cold. The **PYRO** must be within ten degrees of “room temperature” for optimal performance. Avoid placing the **PYRO** in excessive heat or cold. This will reduce the life of your diode and is not covered by warranty. Yes, we can tell. =)

Power Variations:

X-Lasers are hand built laser light show products produced from scratch and built to order. Because lasers are made with such small power levels variances from fixture to fixture do and will exist. This can be influenced by a dozen factors from temperature and diode age to normal voltage fluctuations and initial cold start power. We make all lasers within very small 1/200ths of a watt tolerances but under some conditions differences can be noticeable. If you require precisely matched diodes please contact your dealer and request a power match before ordering as variances within tolerance are not considered a defect.

Troubleshooting:

Problem:

Solutions:

Power supply indicator does not light up.	<ul style="list-style-type: none"> - Check power cable to be sure it is fully inserted. Then check power supply to the unit. - Check input voltage. - Be sure the power switch is "ON." - If the unit works but the indicator does not light up, return to factory for service.
Unit powers on but does not produce laser in Sound Active Mode.	<ul style="list-style-type: none"> - Turn up music and adjust the audio sensitivity on the rear of the unit to "Max." - Be sure that your audio source contains sufficient bass. - Be sure that dip switch #10 is in the "ON" position. (also for AUTO mode)
Unit powers on but does not produce a laser in DMX mode.	<ul style="list-style-type: none"> - Be sure that your DMX console is connected and configured properly. - Check that the DMX addressing on the rear of the fixture corresponds to DMX programming. - Be sure that dip switch #10 is in the "OFF" position. - Be sure that DMX channel 1 is not set to "Laser OFF" or "Sound Active Mode." - Check DMX indicator light (flashing light on rear) to see if the unit is receiving a DMX signal.
Unit powers on and accepts DMX signal, but responds erratically or improperly.	<ul style="list-style-type: none"> - Check the DMX addressing on the rear of the unit to be sure that it matches with your DMX programming. - Install a terminator in the DMX OUT port of the last fixture in the chain. - Be sure that you are using high quality DMX cable. - Unit may be too warm or too cold.
Unit has a loud grinding or clicking noise during startup or during some patterns.	<ul style="list-style-type: none"> - This is not a product defect. The laser will "home" each time it is turned on and may exhibit some similar noises during high speed spinning patterns. Usually the pattern noises fade with time as the micro-stepper motors get worked in.
Light output is low or the beam is not sharp.	<ul style="list-style-type: none"> - Clean the aperture with a lint free cloth and a little window cleaner. Allow to dry fully before use. - Laser may need a few minutes to warm up from a "cold start" or the diode may be damaged/worn.

If none of these solutions are successful, perform two power cycles allowing the unit to rest completely off for at least five minutes each time. If you still have difficulties, please contact your dealer or X-Laser immediately for service.

DO NOT attempt to use any laser product which is not performing optimally.

Technical Specifications:

This laser product is designated as Class 3R during all procedures of operation, maintenance, and service.

Refer to X-Laser.com for the most up-to-date model specifications.

Wavelength: 532-650nm

Emitted/Native Laser Power: <5 mW

Laser Type: DPSS Green and/or Direct Diode Red

Working Modes: DMX , Sound Active, Master/Slave, and Auto

Rated Power Consumption: 30W

Control Input: 3 Pin XLR

Voltage: AC 110V; 50HZ-60HZ, Fuse: 2A/250V

Product Weight: < 8lbs.

Manufacturer's Limited Warranty:

X-Laser warrants that this product will be free from defects of materials or workmanship for 1 year for the mechanical components of the laser system and 6 months for the laser diode from the date of end user purchase. This warranty will only apply to laser systems purchased from an authorized X-Laser dealer. This limited, non-transferable warranty does not cover product abuse, exposure to the elements, accidental damage, shipping damage, improper usage, liquid or smoke damage (including fog juice), or units which have a broken factory seal, have been modified, rented, transferred to a third party, or are more than 12 months old.

Limitation of Liability:

By using this product, the end user certifies that he/she is familiar with and agrees to practice all industry standard laser safety procedures and such procedures contained herein. The purchaser of this product acknowledges that they have been advised that an FDA variance is required prior to use of any Class 3B or 4 laser system and the purchaser certifies that this product will only be operated by experienced and properly trained professionals. X-Laser specifically disclaims any liability arising from improper or unsafe usage of this product, usage without an active variance if applicable, or usage of this product in any manner other than intended. By using this product, the end user agrees to indemnify and hold harmless X-Laser LLC, its' dealers and distributors, employees and staff, subsidiaries, and partners in any action arising from use of this product. Finally, the end user also agrees that prior to any use of this product, he/she shall have in effect a liability insurance policy with a sufficient per incident limit to cover any claims arising from the use of this product. Any purchaser who does not agree to these terms may return their properly packaged and unused X-Laser product within 7 days of purchase for a full and unconditional refund.

Location and Placement Of Caution and Explanatory Labels:

Labels may vary slightly from those shown here.

LASER Light – Avoid Direct Eye Exposure

Side Panel Of Fixture: Unified Label



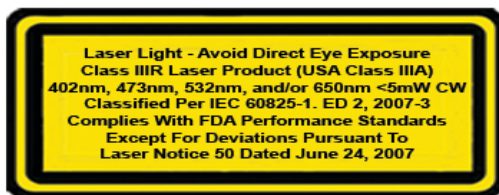
X-LASER LLC

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P.O. Box 353

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www.x-laser.com



**Warranty Void If Case Is Opened. Read
All Instructions Prior To Use.
For Indoor Use Only.**

Model:

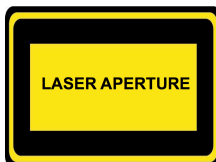
Caution:

Mfg. Date:

**Class IIIB Laser Light When Open.
AVOID EXPOSURE TO BEAM(S).**

SN:

Front of Laser Housing:



New products labels as shown here will be effective for new products produced after August 1 2009. If you have purchased an older laser with several smaller labels, rest assured that those will remain legally compliant.